MSDS Number: 000000000088

ILLOXAN® 3EC HERBICIDE

MSDS Version 3.1

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name	ILLOXAN® 3EC HERBICIDE
Chemical Name	diclofop-methyl: methyl 2-[4-(2,4- dichlorophenoxy)phenoxy]propanoate (active ingredient)
Synonym	
MSDS Number	88
Chemical Family	
Chemical Formulation	
EPA Registration No.	432-1231
Canadian Registrat. No.	

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or Other EMERGENCY call 1-800-334-7577 24 hours/day
For Product Information call 1-800-331-2867

Product Use Description For Postemergence Control of Goosegrass (Silver Crabgrass) in Bermudagrass Turf.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS No.	Concentration % by Weight	
		Minimum	Maximum
Diclofop-methyl	51338-27-3	35.4900	
Inert ingredients,including:		64.5100	
Xylene	1330-20-7		<10.0000
Trimethyl benzene (1,2,4)	95-63-6		<10.0000
Cyclohexanone	108-94-1		
Calcium dodecylbenzene sulfonate	26264-06-2		

INERT INGREDIENTS (64.51%): Only the regulated ingredients are listed above. For additional information, refer to Section 15 (Regulatory Information).

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview	Danger! Keep out of the reach of children. Hazard to humans and domestic animals. Diclofop-methyl, the active ingredient has been shown to have carcinogenic effects in rodents.
Physical State	liquid
Odor	aromatic
Appearance	dark brown
Routes of Exposure	Skin absorption and mist or vapor inhalation.
Immediate Effects	
Eye	Corrosive - causes irreversible eye damage. Do not get in eyes.
Skin	Do not get on skin or clothing. A moderate skin irritant. Prolonged and repeated skin contact may defat the skin resulting in possible irritation and dermitis. Wash thoroughly after using and change clothing.
Ingestion	Harmful if swallowed. Ingestion of sublethal doses causes muscle weakness, tremors, diarrhea and/or weight loss. Do not take internally.
Inhalation	Avoid contact or inhalation of spray mist. Do not take internally.
Chronic or Delayed Long-Term	Diclofop-Methyl has been shown to induce liver tumors in laboratory rodents. However, when used as directed, the potential oncogenic risk to humans is considered to be negligible.
Signs and Symptoms	Overexposure by vapor inhalation or oral ingestion can cause irritation to mucous membranes, severe gastrointestinal irritation, dizziness, nausea, narcosis and related central nervous system effects, muscle weakness, tremors, diarrhea and/or weight loss.

SECTION 4. FIRST AID MEASURES

Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have a

	person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Note to Physician	Aspiration hazard may contradicate the use of gastric lavage.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	38 °C / 100 °F Method: Closed Cup Combustible.
Suitable Extinguishing Media	Small Fires:, dry chemical, carbon dioxide (CO2) Large Fires:, foam, water, Move containers from fire area if without risk., Cool containers with water from maximum distance.
Fire Fighting Instructions	Keep upwind. Isolate hazard area. Avoid inhalation of smoke and fumes. Use water or foam to reduce fumes. Do not touch spilled material.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Land Spill or Leaks	Ignitible. Combustible liquid. Take up with sand, earth, or other non-combustible absorbent material or dike for later disposal. Avoid flame or sparks.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Danger! Causes eye and skin damage. Do not get in eyes, on skin, or on clothing. Avoid contact or inhalation of spray mist. Do not take internally.
Storing Procedures	Do not contaminate water, food, or feed by storage or disposal. Do not use or store near heat or open flame.
Work/Hygienic Procedures	Wash thoroughly after using and change clothing.
Min/Max Storage Temperatures	Do not store below 20°F

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Control airborne concentrations below the exposure guidelines. Use with adequate ventilation. Local exhaust ventilation may be necessary, when used in a confined area. Handle only in ventilated areas.

Eye/Face Protection

goggles or face-shield

Body Protection

impermeable pant and shirts Impermeable rubber gloves (such as neoprene or PVC). Hat waterproof boots

Respiratory Protection

In case of spill, leak or emergency, use chemical cartridge-type respirator approved by the National Occupational Health and Safety.

THE FOLLOWING PROTECTIVE APPAREL MUST BE WORN DURING ALL LOADING AND MIXING OPERATIONS AND WHEN APPLIED BY GROUND EQUIPMENT:

Long-sleeved shirt and ong pants under fabric coveralls
Impermeable rubber gloves, (such as neoprene or PVC)
Waterproof boots
Goggles
Cartridge type respiaator approved by National Institute for Occupational Safety and Health NIOSH)

Exposure Limits

Xylene	1330-20-7	OSHA Z1	PEL	100 ppm	435 mg/m3
		OSHA Z1A	TWA	100 ppm	435 mg/m3
		OSHA Z1A	STEL	150 ppm	655 mg/m3
		US CA OEL	TWA PEL	100 ppm	435 mg/m3
		US CA OEL	Ceiling		300 ppm
		US CA OEL	STEL	150 ppm	655 mg/m3
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	150 ppm	655 mg/m3
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	150 ppm	655 mg/m3
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	150 ppm	655 mg/m3
		ACGIH	TWA		100 ppm
		ACGIH	STEL		150 ppm
Trimethyl benzene (1,2,4)	95-63-6	NIOSH	REL	25 ppm	125 mg/m3
		ACGIH	TWA	25 ppm	123 mg/m3
		OSHA Z1A	TWA	25 ppm	125 mg/m3
		US CA OEL	TWA PEL	25 ppm	125 mg/m3
		ACGIH	TWA		25 ppm
Cyclohexanone	108-94-1	ACGIH	TWA		25 ppm
		NIOSH	REL	25 ppm	100 mg/m3
		OSHA Z1	PEL	50 ppm	200 mg/m3

OSHA Z1A	TWA	25 ppm	100 mg/m3
US CA OEL	TWA PEL	25 ppm	100 mg/m3
ACGIH NIC	TWA		20 ppm
ACGIH NIC	STEL		50 ppm

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	dark brown
Physical State	liquid
Odor	aromatic
Density	1.035 g/cm3 (+/- 0.005) at 20 °C
Boiling Point	80 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Hazardous Polymerization (Conditions to avoid)	Will not occur

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity	Male Rat: LD50: 2,176 mg/kg Moderately toxic. Harmful if swallowed. Female Rat: LD50: 2,029 mg/kg Moderately toxic. Harmful if swallowed.
Acute Dermal Toxicity	Rat: LD50: 5,000 mg/kg Slightly toxic. Harmful if absorbed through the skin.
Acute Inhalation Toxicity	Rat: LC50: 8.2 mg/l 4 h Low toxicity.
Skin Irritation	A moderate skin irritant.
Eye Irritation	Corrosive - causes irreversible eye damage.

THE STUDIES REPORTED BELOW WERE CARRIED OUT WITH DICLOFOP-METHYL TECHNICAL, THE ACTIVE INGREDIENT IN THE PRODUCT.

Chronic Toxicity

An increased incidence of liver tumors was noted in long-term feeding studies in mice and in a preliminary evaluation of the data from a recently completed long-term study in rats. However, diclofop-methyl is not genotoxic and these tumors are believed to be associated with the known induction of peroxisomal proliferation by diclofop-methyl. Rodents are known to be substantially more sensitive than primates to peroxisomal proliferation. In addition, the dose levels at which the tumors were noted were far in excess of those to which humans would be exposed and, in the rat study, may have exceeded the Maximum Tolerated Dose (MTD). Thus, when used as directed, the potential oncogenic risks to humans resulting from the use of diclofop-methyl is considered to be negligible.

Assessment Carcinogenicity

ACGIH		
Xylene	1330-20-7	Group A4
Cyclohexanone	108-94-1	Group A4
NTP		
None		
IARC		
Xylene	1330-20-7	3
Cyclohexanone	108-94-1	3
OSHA		
None		

Reproductive & Developmental Toxicity

Diclofop-methyl was administered to rats at concentrations of 10, 30, and 100 ppm. There was no effect on mating performance or fertility at any concentration. At 100 ppm, however, there was a reduced number of pups born alive, reduced pup weights and general retardation of physical development. The NOEL for reproduction and fertility is considered to be 30 PPM (approx. 2.3 mg/kg bw/day).

Cyclohexanone (an inert ingredient < 11%) has been reported to cause reproductive effects by inhalation in the rat.

Teratogenicity

Teratology studies in rats and rabbits with diclofop-methyl, have shown no embryotoxic or fetotoxic effects at maternally non-toxic doses.

Mutagenicity

Diclofop-methyl: No indication of genotoxicity was noted in an extensive battery of in-vivo and in-vitro studies.

Cyclohexanone has been reported to cause cell mutation in-vitro.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions

This product is toxic to fish. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below mean high water mark. Do not apply when weather conditions favor runoff, leaching or spray drift. Avoid direct application or drift of spray material to water surfaces. Do

not apply within 100 feet of an aquatic habitat. Do not contaminate arable land and/or water when disposing of equipment washwaters.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Disposal	Empty containers should be triple rinsed (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
RCRA Classification	1330-20-7 Xylene US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U239

SECTION 14. TRANSPORT INFORMATION

Non-bulk Packages: Not Regulated for Domestic Transportation.

Bulk Packages are Regulated as:
PROPER SHIPPING LABEL: Combustible Liquid, N.O.S. (xylene range solvents)
Hazard Class: 3
ID No.: NA1993
Packing Group: III

SECTION 15. REGULATORY INFORMATION

US Federal Regulations

EPA Registration No.	432-1231
TSCA list	
Xylene	1330-20-7
Trimethyl benzene (1,2,4)	95-63-6
Cyclohexanone	108-94-1
Calcium dodecylbenzene sulfonate	26264-06-2

TSCA 12b export notification

None

SARA Title III - section 302 - notification and information

None

SARA Title III - section 313 - toxic chemical release reporting

Diclofop-methyl	51338-27-3	1.0%
Xylene	1330-20-7	1.0%
Trimethyl benzene (1,2,4)	95-63-6	1.0%

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

US State right-to-know ingredients

Diclofop-methyl	51338-27-3	CA, MA, MN, NJ
Xylene	1330-20-7	CA, CT, IL, MI, MN, NJ, PA, RI
Trimethyl benzene (1,2,4)	95-63-6	CA, IL, MN, NJ, PA, RI
Cyclohexanone	108-94-1	CA, CT, IL, MN, NJ, PA, RI
Calcium dodecylbenzene sulfonate	26264-06-2	CA, CT, IL, NJ, PA

Canadian Regulations

Canadian Registrat. No.

Canadian Domestic Substance List

Xylene	1330-20-7
Trimethyl benzene (1,2,4)	95-63-6
Cyclohexanone	108-94-1
Calcium dodecylbenzene sulfonate	26264-06-2

Environmental

CERCLA

Xylene	1330-20-7	100 lbs
Cyclohexanone	108-94-1	5,000 lbs
Calcium dodecylbenzene sulfonate	26264-06-2	1,000 lbs

Clean Water Section 307 Priority Pollutants

None

Safe Drinking Water Act Maximum Contaminant Levels

Xylene 1330-20-7

International Regulations

EU Classification

Xylene	1330-20-7	Harmful
R Phrases	Flammable. Harmful by inhalation and in contact with skin. Irritating to skin.	
S Phrases	Keep out of the reach of children. Avoid contact with the eyes.	

European Inventory of Existing Commercial Substances (EINECS)

Diclofop-methyl	51338-27-3
Xylene	1330-20-7
Trimethyl benzene (1,2,4)	95-63-6
Cyclohexanone	108-94-1
Calcium dodecylbenzene sulfonate	26264-06-2

SECTION 16. OTHER INFORMATION

	Health	Flammability	Reactivity	Others
HMIS				
NFPA	2	3	0	

REVISED SECTIONS:
MSDS REVISION INDICATOR:Company name change.

Print Date: 01/13/2005
Supersedes MSDS, which is older than: 12/04/2002